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Artificial Intelligence, Copyright, and Copyright Infringement

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ARTIFICIAL INTELLIGENCE, COPYRIGHT, AND COPYRIGHT INFRINGEMENT

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I. INTRODUCTION

This article will examine how current copyright law can be applied to work product created by artificial intelligence ("AI"). The field of AI has been consistently and rapidly growing over the last half-century and is projected to become a $70 billion industry by 2020.[1] Modern AI software is becoming increasingly complex and can produce work that has never been created by computers before.[2] For example, AI can be trained to create music,[3] art,[4] short

    1. Shlomit Yanisky-Ravid & Luis Antonio Velez-Hernandez, *Copyrightability of Artworks Produced by Creative Robots and Originality: The Formality-Objective Model*, 19 MINN. J.L. SCI. & TECH. 1, 6 (2018).

    2. *See* Nina I. Brown, *Artificial Authors: A Case for Copyright in Computer-Generated Works*, 20 COLUM. SCI. & TECH. L. REV. 1, 4 (2018) ("[A]dvertising agency J. Walter Thompson taught a computer to produce a 3-D printed painting, mimicking the depth and texture of a true painting, in the style of the Dutch master artist Rembrandt van Rijn. The computer-generated image, which looks like it could have been painted by Rembrandt himself . . . .").

    3. *See, e.g.*, Amy X. Wang, *The Musical AI Is Now Working on Its Debut Album(s)—and Wants to Do the Beatles Better than the Beatles*, QUARTZ (Oct. 18, 2016), https://qz.com/812231/sony-is-making-an-artificial-intelligence-algorithm-that-writes-perfect-hit-making-songs/ [https://perma.cc/F657-9PKU].

    4. *See, e.g.*, Tim Nudd, *Inside 'The Next Rembrandt': How JWT Got a Computer to Paint like the Old Master*, ADWEEK (June 27, 2016), http://www.adweek.com/brand-marketing/inside-next-rembrandt-how-jwt-got-computer-paint-old-master-172257/ [https://perma.cc/C2RM-8FAN].

films,[5] poetry,[6] and news stories.[7] The work that AI creates also falls under the domain of copyright law.[8] Who would own the copyright in a case where an AI program creates new artwork? What if AI wrote a song that "voices never share[d]?"[9] If AI *accidently* copies a piece of copyright work, would we hold the AI liable or the AI's creator liable? Answers to these questions are still ambiguous under current copyright law.[10] As AI technology continues to advance, courts will need to address these questions and figure out how to treat AI work products under the current United States copyright schema.

This article will examine how current copyright law is likely to treat work that is created autonomously by an AI software. Part II of this article will define AI and draw a distinction between AI and sentient robots. It will also offer a crash course in basic United States copyright law and its applicability to works created by AI. It will also explain how AI is predicted to displace human workers and explain how AI can disrupt social security and income tax. Part II will also introduce the concept of the agency-principal relationship in order to explain how it can be applied to AI and its owner.

Part III of this article will analyze the legal issues regarding AI and copyright. It will first explain how AI are not afforded copyright protection because current copyright law will not treat AI as authors. Part III explains how AI can be treated as either (1) an agent of a principal or (2) a consumer product, and based on this classification, copyright protection will be granted to either the principal of the AI or to the end-user of the AI. Part III also examines legal issues in treating AI as a corporation and treating AI-produced

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5. *See, e.g.*, Annalee Newitz, *Movie Written by Algorithm Turns Out to Be Hilarious and Intense*, ARS TECHNICA (June 9, 2016, 6:30 AM), https://arstechnica.com/gaming/2016/06/an-ai-wrote-this-movie-and-its-strangely-moving/ [https://perma.cc/6CTD-B2DM].

6. *See, e.g.*, Matt Reynolds, *Neural Network Poetry Is So Bad We Think It's Written by Humans*, NEW SCIENTIST (July 7, 2017), https://www.newscientist.com/article/2140014-neural-network-poetry-is-so-bad-we-think-its-written-by-humans/ [https://perma.cc/K846-GCNR].

7. *See, e.g.*, Ravi Somaiya, *The A.P. Plans to Automate Quarterly Earnings Articles*, N.Y. TIMES (June 30, 2014), https://www.nytimes.com/2014/07/01/business/media/the-ap-plans-for-computers-to-write-corporate-earnings-news.html [https://perma.cc/K6MQ-TMQ3].

8. Robert C. Denicola, *Ex Machina: Copyright Protection for Computer-Generated Works*, 69 RUTGERS U.L. REV. 251, 252–53 (2016) (stating that United States copyright law is "woefully, almost willfully" unprepared to address issues of authorship for work created with the assistance of AI); *see also* Sarit K. Mizrahi, *Jack of All Trades, Master of None: Is Copyright Protection Justified for Robotic Faux-Riginality?*, WEROBOT 1, 2 (Apr. 2019) ("The increasing development of algorithms that behave unpredictably, in a manner that provides the illusion that robots make choices in their output, has led to the creation of a good deal of machine generated content that appears creative.").

9. SIMON & GARFUNKEL, THE SOUND OF SILENCE (Columbia Records 1965).

10. Kalin Hristov, *Artificial Intelligence and the Copyright Dilemma*, 57 IDEA: J. FRANKLIN PIERCE CENTER FOR INTELL. PROP 431, 434 (2017); Denicola, *supra* note 8, at 253; Ryan Abbott, *I Think, Therefore I Invent: Creative Computers and the Future of Patent Law*, 57 B.C.L. REV. 1079, 1079–80 (2016); Brown, *supra* note 2, at 5–6.

work as public domain. Part III will finally explain how there is no copyright protection offered for someone's voice, image, or likeness.

Part IV of this article will finally examine non-legal issues such as compensation for the AI-agent, effects of displacing human workers, and insurance as a way to offset AI infringement. It will also examine whether the United States government should tax AI and how social security can be affected with largescale AI adoption.

Ultimately, this article will show that AI can be treated either as (1) agents of a principal or (2) a consumer product. If the AI is an agent, the principal will own the copyright whereas if the AI is a consumer product, the end-user will own the copyright.

II. BACKGROUND

A. Defining AI

Artificial intelligence ("AI") is a set of techniques or instructions that are aimed to simulate some aspect of biological cognition using machines.[11] Early computer scientists theorized the use of abstract symbols combined with logical reasoning as a way to simulate AI. For example, early computer scientists used basic algorithms to successfully create programs that utilized heuristics, or "rules of thumb," that could help them accomplish tasks like running through a maze.[12] However, because of the complexity and cost of computer technology, many of the other AI theories did not yield any fruitful results.[13]

Nowadays, almost all AI techniques are based on a technique called machine learning.[14] Machine learning uses computer algorithms that can "learn" or improve performance over time on a specific task.[15] These algorithms allow the AI to figure out the best way to accomplish the assigned

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11. Ryan Calo, *Artificial Intelligence Policy: A Primer and Roadmap*, 51 U.C.D. L. REV. 399, 404 (2017).

12. PAMELA MCCORDUCK, MACHINES WHO THINK: A PERSONAL INQUIRY INTO THE HISTORY AND PROSPECTS OF ARTIFICIAL INTELLIGENCE 246 (2d ed. 2004).

13. Calo, *supra* note 11, at 404.

14. *Id.* at 405.

15. Harry Surden, *Machine Learning and the Law*, 89 WASH. L. REV. 87, 89–95 (2014). Machine learning programmers have based their algorithms off models of the human brain and call these models "neural networks." *Id.* A neural network computer program will run through the assigned task and use feedback loops to improve its performance. *Id.* To create a neural network, programmers will "train" the AI by creating a framework of different algorithms that work together to process data inputs. *Id.* The AI's learning starts off very slowly but grows at an exponential rate as it attempts to perform its assigned task over thousands of iterations. *Id.*

task without needing to be pre-programmed with specific instructions.[16] The learning process of the AI is considered to be a "black box" because the programmer only sees the input and output, but cannot directly observe the AI's learning process.[17]

An example of machine learning is teaching an AI to recognize an image of a cat. The AI is first shown thousands of images of cats. The AI's program contains numerous nodes (also called a neural network) that work together to focus on different aspects of each image.[18] For example, some nodes in the network focus on color and brightness differences between adjacent pixels while other nodes work together to find the edges of the image.[19] Other nodes focus on repeated shapes (like the nose of the cat) in the image and their relative positioning to other shapes in the image (like the eyes of the cat).[20] As the AI goes through iterations of its instructions, it pieces together elements of a typical cat's face from the information it has learned.

The AI learning process is excruciatingly slow in the beginning because the AI is not given any instructions on what features of the cat it should focus on. However, once the AI goes through a few thousand iterations of cat pictures, it can strengthen its network and slowly "learn" the features of a cat and can even generate unique cat faces on its own.[21] The machine learning methodology has also been applied to creating movie trailers and writing newspaper articles.[22]

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16. McKenzie Raub, *Bots, Bias and Big Data: Artificial Intelligence, Algorithmic Bias and Disparate Impact Liability in Hiring Practices*, 71 ARK. L. REV. 529, 532 (2018); Curtis E.A. Karnow, *The Opinion of Machines*, 19 COLUM. SCI. & TECH. L. REV. 136, 143 (2017).

17. Hristov, *supra* note 10, at 434.

18. Jason Johnson, *This Deep Learning AI Generated Thousands of Creepy Cat Pictures*, MOTHERBOARD, (July 14, 2017) https://motherboard.vice.com/en_us/article/a3dn9j/this-deep-learning-ai-generated-thousands-of-creepy-cat-pictures [https://perma.cc/W9G2-F6EH].

19. *See generally* Karnow, *supra* note 16, at 144 (explaining how AI have been trained to do facial recognition of human faces; the method is basically the same for cat facial detection).

20. *Id*.

21. *Id*.; Johnson, *supra* note 18.

22. John R. Smith, *IBM Research Takes Watson to Hollywood with the First "Cognitive Movie Trailer"*, THINK BLOG (Aug. 31, 2016), https://www.ibm.com/blogs/think/2016/08/cognitive-movie-trailer [https://perma.cc/YG5K-4HY8]; *see* 20th Century Fox, *Morgan | IBM Creates First Movie Trailer by AI [HD] | 20th Century FOX*, YOUTUBE (Aug. 31, 2016), https://www.youtube.com/watch?v=gJEzuYynaiw [https://perma.cc/CA5B-FXHF] (discussing how 20th Century Fox asked IBM to use Watson to create a movie trailer for the film *Morgan*: Watson was trained by "watching" hundreds of hours of footage and given labels on what specific scenes were with tags for "scary, tender, eerie"); *see, e.g.*, WashPostPR, *The Washington Post Leverages Automated Storytelling to Cover High School Football*, WASHPOST PR BLOG, (Sept, 1, 2017), https://www.washingtonpost.com/pr/wp/2017/09/01/the-washington-post-leverages-heliograf-to-cover-high-school-football/?noredirect=on&utm_term=.f8893e4fb06f   [https://perma.cc/D9JW-YQZ4] (stating that *The Washington Post* has already used its own in-house AI, Heliograph, to automate local high school football games).

Certain AI is designed to rewrite their code to improve performance.[23] This conjures images from Hollywood films of a dystopian future where robots are out to kill humans.[24] Let me be clear: for the purposes of this article, AI should not be confused with robots seen in films or TV. The AI depicted in pop culture are sentient; real-world AI are not sentient. Sentience is the capacity to feel, perceive, or experience subjectively.[25] Part of sentience includes learned behavior and the free will to not follow that learned behavior.[26]

Let's take the example of Bender, a robot from the TV series, *Futurama*. Bender is *not* modern-day AI because he is a sentient being. Bender has free will and is able to perform any action, including hurting humans, regardless of what his core code instructs him to do.[27] Even though Bender can learn new behaviors, his sentience allows him to choose not to perform that behavior.

Modern AI lack free will because they are still preprogrammed with a set of instructions to learn a new task.[28] Even though they can choose different courses of actions to complete the task, they are impeded by their core code.[29] The AI's analysis does not exude any real skill or judgment; it simply looks for patterns based on its given instructions and gives an output.[30] While AI's ability to "learn" demonstrates some level of skill, the AI cannot choose to exercise free will and not follow its instructions.[31] Furthermore, AI programs can only operate in a predefined manner and are unable to complete tasks

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23. Jade Boyd-Rice, *NEW A.I. APPLICATION CAN WRITE ITS OWN CODE*, FUTURITY, (Apr. 25, 2018), https://www.futurity.org/artificial-intelligence-bayou-coding-1740702 [https://perma.cc/F9GJ-VKXK].

24. 2001: A SPACE ODYSSEY (Metro-Goldwyn-Mayer 1968) (HAL 9000, the ship's computer); THE TERMINATOR (Hemdale Film Corp. 1984), TERMINATOR 2: JUDGMENT DAY (TriStar Pictures 1991), and TERMINATOR 3: RISE OF THE MACHINES (Warner Bros. Pictures 2003) (Skynet, computer system); *Futurama* (20th Century Fox Television 1999–2013) (Bender the robot); BLADE RUNNER (Warner Bros. 1982) (Nexus-6 replicants).

25. *See   Sentience*,   MERRIAM-WEBSTER,   http://www.merriam-webster.com/dictionary/sentience [https://perma.cc/UCH8-XB9G] (last visited Jan. 28, 2019).

26. *See generally id*.

27. *Free   Will   Hunting*,   FUTURAMA   WIKI, https://futurama.fandom.com/wiki/Free_Will_Hunting [https://perma.cc/QBV3-VGA9] (last visited Jan. 28, 2019).

28. Lawrence B. Solum, *Legal Personhood for Artificial Intelligences*, 70 N.C. L. REV. 1231, 1272 (1992).

29. *See* Solum, *supra* note 28, at 1272–73; s*ee also* Arie A. Covrigaru & Robert K. Lindsay, *Deterministic Autonomous Systems*, AI MAG., Fall 1991, at 110, 111–13 (arguing that "an entity is autonomous if it is perceived to have goals, including certain kinds of goals, and is able to select among a variety of goals that it is attempting to achieve").

30. Mizrahi, *supra* note 8, at 8.

31. *Id.*

outside their field of intelligence.[32] Therefore, it may be some time before AI gets to the level of complexity as robots depicted in film and television.[33]

Since AI is not a sentient being, we must examine how United States copyright law will treat AI that creates copyrightable material.[34]

B. United States Copyright Law

This section will explore United States copyright law and show how AI that create copyrightable products are *not* afforded copyright protection.

1. What is U.S. Copyright Law

The United States Constitution grants Congress the power to enact laws in order to "promote the Progress of Science and useful Arts."[35] Copyright law is codified under Title 17 of the U.S. Code, and protection under the Copyright Act applies to original works of authorship that are fixed in any tangible medium of expression.[36] The Copyright Act gives the owner the following exclusive rights: (1) make copies of the work; (2) create derivative works based on the copyrighted work; (3) distribute copies of the work; and (4) perform and display the work publicly.[37] Copyright protection applies to: (1) literary works; (2) musical works; (3) dramatic works; (4) choreographic works; (5) pictorial, graphic, and sculptural works; (6) motion pictures and other audiovisual works; (7) sound recordings; and (8) architectural works.[38] Copyright protection *cannot* be applied to ideas, procedures, processes, systems, methods of operation, concepts, principles, or discoveries.[39] In other words, copyright protects the expression of ideas, but it does not protect (as to allow for potential monopolies) those ideas.[40]

2. Policy of U.S. Copyright Law

The predominant philosophical framework behind American copyright law is primarily utilitarian.[41] Under this view, copyright protection exists to

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32. *See* Michelle Sellwood, *The Road to Autonomy*, 54 SAN DIEGO L. REV. 829, 834 (2017).

33. *See* Peter Stone et al., *Artificial Intelligence and Life in 2030: Report of the 2015 Study Panel* 50 (Sept. 2016), https://ai100.stanford.edu/sites/g/files/sbiybj9861/f/ai_100_report_0831fnl.pdf [https://perma.cc/Z7SU-W6NR].

34. *See* Denicola, *supra* note 8, at 264.

35. U.S. CONST. art. I, § 8, cl. 8.

36. 17 U.S.C. § 102(a) (2018).

37. *Id.* § 106.

38. *Id.* § 102(a).

39. *Id.* § 102(b); Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., Inc., 499 U.S. 340, 364 (1991).

40. Baker v. Selden, 101 U.S. 99, 105–07 (1879).

41. MARK A. LEMLEY ET AL., INTELLECTUAL PROPERTY IN THE NEW TECHNOLOGICAL AGE: 2018, at 499 (2018).

encourage the expression of ideas by giving authors exclusive rights over their work. Without copyright protection, an author might not spend their time and money required to write a book or compose a song because others will be able to freely and easily make and distribute copies of that work.[42] Since the federal government has the express power to create and define law related to copyrights, they can change copyright law to address new types of works deserving of protection.[43] For example, when the Copyright Act of 1790 was passed, copyrights granted authors protection for only a fourteen year period, with an additional fourteen-year term if the author survived the expiration of the first copyright term.[44] Nowadays, the copyright lasts for the life of the author plus seventy years (or for anonymous works, ninety-five years from the year of its first publication or a term of 120 years from the year of its creation, whichever expires first).[45] One of the purposes of this change was to provide incentives for creating new forms of expression.[46]

However, when the social standard is different from the legal standard, copyright law may not accomplish its goal.[47] For example, in the case of AI generating work that can otherwise be copyrightable by humans, the copyright law is ambiguous in terms of who gets the copyright. This is especially true where the purpose of the law is to provide incentives for behavior.

3. Elements of Copyrightable Material

AI are not human beings and are not even recognized as legal persons, so they cannot own the copyright to their created works. Three fundamental criteria for copyright protection are: (1) original; (2) work of authorship; and (3) fixed in a tangible form.[48]

Originality requires (1) independent creation and (2) creativity on part of the creator of the work.[49] Independent creation means the creator of the work did not get contribution from others.[50] Original creativity means the creator did

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42. *See Feist Publ'ns, Inc.*, 499 U.S. at 355.

43. U.S. CONST. art. I, § 8, cl. 8.

44. LEMLEY ET AL., *supra* note 41, at 494.

45. 17 U.S.C §§ 302(a), 302(c) (2018).

46. *See* U.S. CONST. art. I, § 8, cl. 8; Baker v. Selden, 101 U.S. 99, 105 (1879) (explaining that "the title of the act of Congress is, 'for the encouragement of learning,' and was not intended for the encouragement of mere industry, unconnected with learning and the sciences").

47. STEPHAN M. MCJOHN, EXAMPLES & EXPLANATIONS: INTELLECTUAL PROPERTY 14 (5th ed. 2015).

48. 17 U.S.C. § 102(b); *see* Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., Inc., 499 U.S. 340, 355 (1991).

49. *See Feist Publ'ns, Inc.*, 499 U.S. at 358.

50. *See id.* at 345.

not copy it from other works.[51] The burden is on the author to show that they created the work independently.[52] Copyright law *will* allow two different creators to have copyright in similar works as long as they both were created independently of each other.[53] The originality requirement for creativity says that only "some minimal level of creativity" is needed.[54] The work does not have to be novel or innovative but must be more than "so mechanical or routine as to require no creativity whatsoever."[55] For example, creating a collection of works and listing them alphabetically is not original enough because alphabetically arranging a list of works is not creative.[56] Similarly, creating a volume of work and paginating them in numerical order will not grant the author copyright protection because listing pages in numerical order is not creative.[57] Therefore, the originality requirement of copyright law is so low that most works meet it quite easily.[58]

A work is fixed in a tangible medium of expression when it is "sufficiently stable to be perceived, reproduced, or communicated for a period of more than transitory duration."[59] The copyright act requires that the tangible medium be construed broadly because the medium can be one that is "now known or later developed" and that fixation of the work is sufficient if it can be "perceived, reproduced, or otherwise communicated" directly or with the aid of a machine or device.[60] Examples of tangible mediums include paper for literary works and film for photographs,[61] and even read-only memory in the case of computer programs.[62] As long as AI produces work that is fixed on any tangible medium, the AI has met the fixation element for copyright purposes.[63]

An author is one who creates or originates a work of a type covered by the Copyright Act.[64] Copyright protection only applies to works with human

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51. *Id.*
52. *Id.* at 362.
53. *See id*. at 358.
54. *Id.*
55. *Id.* at 379.
56. *Id.* at 361–62.
57. Matthew Bender & Co., Inc. v. W. Pub. Co., 158 F.3d 693, 699 (2d Cir. 1998).
58. MCJOHN, *supra* note 47, at 22.
59. 17 U.S.C. § 101 (2018).
60. H.R. REP. NO. 94-1476, at 52–53 (1976); LEMLEY ET AL., *supra* note 41, at 515.
61. *See* Burrow-Giles Lithographic Co. v. Sarony, 111 U.S. 53, 60–61 (1884).
62. *See* Tandy Corp. v. Personal Micro Computers, Inc., 524 F. Supp. 171 (N.D. Cal. 1981).
63. *But see* Garrett Huson, *I, Copyright*, 35 SANTA CLARA HIGH TECH. L.J. 54, 77 (2018) (saying that because a human does not fix the work of an AI onto a tangible medium, the AI's work automatically fails to create ownership rights).
64. *Burrow-Giles Lithographic Co.*, 111 U.S. at 55; *see* 17 U.S.C. § 101 (2018).

authors.[65]   Since animals are not considered humans, they cannot hold a copyright even if they satisfy all the other elements of copyright.

A famous case in point is *Naruoto v. Slater*, also known as the "monkey selfie copyright dispute."[66] In that case, human photographer, David Slater, left his camera unattended in a wildlife reserve in Sulawesi, Indonesia.[67] A crested macaque monkey, Naruto, found the camera and began taking selfie photographs.[68] Slater took the pictures and published them in a book in which he described the selfies of Naruto as "[p]osing to take its own photograph, unworried by its own reflection, smiling. Surely a sign of self-awareness?"[69] The United States Court of Appeals for the Ninth Circuit held that since animals are not human, Naruto lacked subject matter jurisdiction under Article III of the constitution and failed to state a claim under the Copyright Act.[70] The court made no remark regarding how it would have ruled had Naruto been a pet, and therefore property of a human being.[71]

Since AI are not human beings, and not even recognized as legal persons (like corporations), they will not be considered authors for the purposes of copyright ownership.

4. Copyright Protection for Sentient AI

While there is no clear jurisprudence on how sentient AI will be treated under the Copyright Act, it's unlikely that sentient AI will be afforded copyright protections because these protections are only available to human authors.[72] Going back to Bender, it's likely that Bender will not have copyright ownership over things that he creates. For example, in Season 3, Episode 13, *Bendin' in the Wind*, Bender teams up with singer and songwriter, Beck, and composes his own music.[73] Regardless of how sentient or human-like Bender

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65. *Compendium of U.S. Copyright Office Practices*, UNITED STATES COPYRIGHT OFFICE 4, https://www.copyright.gov/comp3/chap300/ch300-copyrightable-authorship.pdf
[https://perma.cc/L2D4-49U6] (last visited Jan. 29, 2019); *see* Naruto v. Slater, 888 F.3d 418, 422 (9th Cir. 2018).

66. *See* Susannah Cullinane, *Monkey Does Not Own Selfie Copyright, Appeals Court Rules*, CNN (Apr. 24, 2018), https://www.cnn.com/2018/04/24/us/monkey-selfie-peta-appeal/index.html [https://perma.cc/H6A3-89X6].

67. *Naruto*, 888 F.3d at 422.

68. *Id.*

69. *Id.* at 420 (quoting DAVID J. SLATER, WILDLIFE PERSONALITIES (2014)) (internal quotation marks omitted).

70. *Id.*

71. *See id.*

72. *Compendium of U.S. Copyright Office Practices*, *supra* note 65, at 4.

73. *Bendin'   in   the   Wind*,   FUTURAMA   WIKI, https://futurama.fandom.com/wiki/Bendin%27_in_the_Wind [https://perma.cc/8R9M-6V25] (last visited Jan. 28, 2019).

is, the Copyright Act will not give Bender copyright protections to his own songs simply because he is not a human being.[74] However, sentient-AI and copyright are outside of the scope of this article and thus will not be examined further.

5. Copyright Infringement

A copyright is infringed when a party violates a copyright owner's exclusive right.[75] The copyright owner must show that the infringer copied the work and that there is substantial similarity between the original work and the copied work.[76] "To prove copying, the similarities between the two works need not be extensive, and they need not involve protected elements of the plaintiff's work."[77]

The copyright owner can further protect themselves by obtaining a copyright registration with the United States Copyright Office by listing what they are attempting to copyright and paying a $55.00 registration fee.[78] When a copyright is infringed upon, the original author of the work can seek remedies such as injunctions against the infringing party, impounding and disposition of infringing work, money damages, costs, and attorney fees.[79] Furthermore, the infringing party can face criminal charges if they willfully infringe upon a copyright.[80]

The Copyright Act allows the infringing party affirmative defenses to justify their infringement.[81] For example, under the fair use doctrine, a party can use copyrighted work for the purposes of criticism, comment, reporting, teaching, scholarship, or research.[82] This makes sense since these listed activities are designed to encourage creativity and expression/discussion of new ideas.

Nevertheless, the Copyright Act does not address what happens when AI commits the infringement.[83] Since AI are not able to hold copyright in any of the type of products discussed above, they cannot be sued for damages.

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74. *Compendium of U.S. Copyright Office Practices*, *supra* note 65, at 4.
75. 17 U.S.C. § 501(a) (2018).
76. Arnstein v. Porter, 154 F.2d 464, 468 (2d Cir. 1946).
77. Rentmeester v. Nike, Inc. 883 F.3d 1111, 1117 (9th Cir. 2018).
78. *Copyright   Office   Fees*, UNITED   STATES   COPYRIGHT   OFFICE   7, https://www.copyright.gov/circs/circ04.pdf [https://perma.cc/KV57-EYTS] (last visited Jan. 29, 2019).
79. 17 U.S.C. §§ 502–505 (2018).
80. *Id.* § 506.
81. *Id.* §§ 107–112.
82. *Id.* § 107.
83. *Id.* § 501.

Therefore, there must be an alternate party that may hold the copyright and also be liable for the infringement. For this, we can turn to agency principles.

C. Agent-Principal Relationships for Artificial Entities

This section will explain how agency principles can apply to AI work that is subject to copyright. The terms "agency" and "employee" will be used interchangeably. Agency is the fiduciary relationship that arises when one person, the principal, agrees to have another person, the agent, act on the principal's behalf and be subject to the principal's control, and the agent consents to the act and control.[84] An agent has the authority to take action on behalf of the principal in order to fulfill the objectives of the principal.[85] This authority can be either actual (expressed or implied) or apparent.[86] A principal is subject to be liable to a third party harmed by an agent who is acting within the scope of their employment, and the agent's conduct is tortious or the principal is negligent in selecting, supervising, or controlling the agent.[87] Agency law says that the principal is the owner of the fruits of their agent,[88] and agents cannot use their position to enrich themselves, and if they do, their profits belong to the principal.[89]

In order to determine whether an agent-principle relationship exists, courts will look at factors like whether the principal (1) controls the agent's geospatial work place and work hours, (2) has training programs for the agent, (3) pays the bills, (4) treats the agent as such for tax purposes, and (5) supplies the tools and/or instructions for the agent to complete the work.[90] However, we must first determine whether AI can even be agents.

1. Can AI be Agents

Generally, only natural persons can be agents. Since AI lacks required authorship for copyright protection, it is unlikely that AI can be treated as agents for agent-principal purposes. However, many states have made exceptions for the natural person requirement and allow corporations to serve as agents under certain circumstances.[91] For example, California Corporations

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84. RESTATEMENT (THIRD) OF AGENCY § 1.01 (AM. LAW INST. 2006).

85. *Id.* § 2.02.

86. *Id.* § 2.02–2.03.

87. *Id.* § 7.03(1)(a).

88. *See* Reading v. Regem, 2 KB 268 (1948).

89. *Id.*

90. RESTATEMENT (THIRD) OF AGENCY § 2.02; *see* Creative Non-Violence v. Reid, 490 U.S. 730, 739–41 (1989); Humble Oil & Ref. Co. v. Martin, 222 S.W.2d 995, 997–98 (Tex. 1949).

91. *See* CAL. CORP. CODE § 1505 (West 2019); HAW. REV. STAT. ANN. § 414-61 (West 2019); VA. CODE ANN. § 13.1-634 (West 2019).

Code allows a corporation to serve as an agent for the purpose of service of process if it meets statutory requirements.[92]   Hawaii's Corporations and Partnerships laws allow a registered agent to be "[a] domestic entity authorized to transact business or conduct affairs in this State."[93]   The entity agent is required to be controlled by natural persons in order to be an agent. If agency notions were applied to AI, the law will first have to treat AI as a de-facto agent. The AI cannot assent to be an agent for a principal, and so the law must treat the AI as an agent to avoid any verbiage issues. Currently, AI is always controlled by a natural person. This natural person is likely to be the one who has created the AI or is the person who gives instructions to the AI. Therefore, agent-principal law can be extended to allow the AI to be an agent if the AI is controlled by a natural person.

A principal can exert control over the AI by controlling the programming, instructions, and goals that they supply to the AI. The principal can also give feedback to the AI and therefore control the end-product.[94] If the AI outputs the incorrect product, the principal can modify the instructions it gives to the AI in order to fine-tine the AI's work.[95] Furthermore, the principal retains geospatial control over the AI by confining the AI to a machine and/or a computer.[96] The AI produces work for the principal based on the instructions that it receives.

Since the principal supplies and controls all aspects of the AI to produce work, the AI can be treated as an agent of a principal.

D. AI Potential Worker Displacement

It is predicted that AI will displace up to forty percent of the world's workers within the next fifteen years.[97] This of course should come as no surprise to Americans who have seen their jobs swallowed up by automation and machines since the 1980s.[98] However, most of that automation resulted in

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92.   CAL. CORP. CODE § 1505.

93.   HAW. REV. STAT. ANN. § 414-61.

94.   Surden, *supra* note 15, at 90–92.

95.   *See id.*

96.   *See id.*

97.   Scott Pelley, *Facial and Emotional Recognition; How One Man is Advancing Artificial Intelligence*, 60 MINUTES (Jan. 13, 2019), https://www.cbsnews.com/news/60-minutes-ai-facial-and-emotional-recognition-how-one-man-is-advancing-artificial-intelligence   [https://perma.cc/4BEH-WQL2]; Dan Robitzski, *FORMER GOOGLE EXEC: AI WILL REPLACE 40 PERCENT OF JOBS IN 15   YEARS*,   FUTURISM   (Jan.   10,   2019),   https://futurism.com/the-byte/google-ai-jobs [https://perma.cc/2NDR-P89M].

98.   Rebecca J. Rosen, *In Praise of Short-Term Thinking*, THE ATLANTIC (Sept. 3, 2015), https://www.theatlantic.com/business/archive/2015/09/jobs-automation-technological-unemployment-history/403576 [https://perma.cc/Z58D-UHR3].

decreasing the amount of blue collar, factory-type jobs.[99] For example, robots in the form of machinery are replacing humans in industry sectors like factories, supply chains, and cleaning.[100] Using AI to create content however, threatens workers in industries that are generally non-blue collar. AI can affect the livelihoods of artists, musicians, filmmakers, and other creative producers because AI can produce more content in a shorter amount of time than humans. Even tech-celebrity, Elon Musk, has stated that one solution to the problem is to create a universal basic income.[101] Therefore, one issue to keep in the back of our minds is to figure out potential solutions for problems that we know will exist with the advent of AI displacing workers.

The European Union ("EU") has already considered the possibility that AI will perform a large chunk of human work currently performed by humans and has considered the possibility of charging a fee on parties that use human-displacing AI.[102] One report from the European Parliament discusses how the AI use-fee could fund and support displaced workers.[103] The EU toyed with the idea of giving AI the status of "legal persons".[104] It is clear that the EU is considered about the very real possibility of AI displacing its human workers in the future.

As AI continue to expand into new industrial sectors, we must think of potential solutions to problems caused by worker displacement.

III. LEGAL ANALYSIS

A. AI and Copyright

This section will analyze the treatment of AI copyrightable work. It's important to distinguish the AI's code from the AI's work product. The code

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99. *See* Lola Fadulu, *The New Casualties of Automation*, THE ATLANTIC (Dec. 21, 2017), https://www.theatlantic.com/education/archive/2017/12/the-new-casualties-of-automation/548948 [https://perma.cc/GNK4-TL73].

100. Xavier Oberson, *Taxing Robots? From the Emergence of an Electronic Ability to Pay to a Tax on Robots or the Use of Robots*, WORLD TAX JOURNAL, May 2017, at 247.

101. Chris Weller, *Elon Musk Doubles Down on Universal Basic Income: 'It's Going to be Necessary'*, BUSINESS INSIDER (Feb. 13, 2017, 12:53 PM), https://www.businessinsider.com/elon-musk-universal-basic-income-2017-2 [https://perma.cc/UR3X-WP93].

102. *See Report with Recommendations to the Commission on Civil Law Rules on Robotics (2015/2103 (INL))*, at introduction K, A8-0005/2017 (Jan, 27, 2017), http://www.europarl.europa.eu/doceo/document/A-8-2017-0005_EN.pdf [https://perma.cc/8U9E-G3NN].

103. *Id.*

104. Janosch Delcker, *Europe Divided Over Robot 'Personhood'*, POLITICO (Apr. 11, 2018, 12:45 PM), https://www.politico.eu/article/europe-divided-over-robot-ai-artificial-intelligence-personhood [https://perma.cc/BSN2-KT46].

and algorithms that a programmer inputs into an AI may be copyrightable.[105] However, the code is different from the AI's work product because the product created by the AI is derived entirely without extra input from the programmer.[106] It has been well established that the author of the code and algorithms for a computer program is the owner of them.[107]

AI work that copyright applies to is going to be artwork,[108] songs,[109] and writing.[110] As discussed above, AI cannot be the copyright owner of the work that they create.[111]   Therefore, the question remains: which party gets the copyright in work that originates from AI?

Two theories that this article proposes are (1) treating the AI as agents (synonymous with employees for the purposes of this article) and (2) treating AIs as consumer products.[112] If the AI is an agent of the principal, the principal will be the copyright holder. For the purposes of this article, the principal is a corporation; the individual programmers who create the AI will not be individual copyright holders. If the AI is treated as a consumer product, the end-user (usually the customer) will be the copyright holder; the company that creates and sells the product will not have any copyright interest in the product.

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105. *See generally* 17 U.S.C. § 101 (2018).

106. *See* Sega Enterprises Ltd. v. Accolade, Inc., 977 F.2d 1510, 1518 (9th Cir. 1992), *as amended* (Jan. 6, 1993) (holding that intermediate copying of computer object code may infringe exclusive rights granted to copyright owner to reproduce work); see generally Karnow, *supra* note 16, at 143–44.

107. Jan L. Nussbaum, *Apple Computer, Inc. v. Franklin Computer Corporation Puts the Byte Back into Copyright Protection for Computer Programs*, 14 GOLDEN GATE U. L. REV. 281, 281–83 (1984); LEMLEY, MENELL ET AL., SOFTWARE AND INTERNET LAW 34–35 (2011); 17 U.S.C. §§ 101, 117 (2018).

108. *See, e.g.*, RobotCatArt, *Is it CHEATING to Let an AI Color Your Art?*, DEVIANT ART (Jan. 27, 2017, 8:50 PM), https://www.deviantart.com/robotcatart/journal/Is-it-CHEATING-to-let-an-AI-color-your-art-660045105 [https://perma.cc/4D49-4M7N].

109. *See,* e.g., William Hughs, *Teen Builds Rapping AI Patterned After Kanye Lyrics*, AV NEWS (Mar. 17, 2017, 2:05 PM), https://news.avclub.com/teen-builds-rapping-ai-patterned-after-kanye-lyrics-1798259588 [https://perma.cc/Q3HH-38C6].

110. *See,* e.g., Madhu v. Swamy, *How Artificial Intelligence is Emerging in Writing Industry?*, CUSTOMER THINK (May 28, 2018), http://customerthink.com/how-artificial-intelligence-is-emerging-in-writing-industry [https://perma.cc/ZB3G-5QKJ].

111. *See* 17 U.S.C. § 101 (2018); Naruto v. Slater, 888 F.3d 418, 422 (9th Cir. 2018).

112. *See* Sellwood, *supra* note 32, at 848–50 (2017); David C. Vladeck, *Machines Without Principals: Liability Rules and Artificial Intelligence*, 89 WASH. L. REV. 117, 127–30 (2014); Ana Ramalho, *Will Robots Rule the (Artistic) World?: A Proposed Model for the Legal Status of Creations by Artificial Intelligence Systems*, 21 JINTLAW 1, 10 (2017) ("If there is enough of a human input in creating an original work, then copyright protection will be available at least for the human-created part of the work (even though, admittedly, there may be cases where human and machine contributions are not easy to separate or evaluate).").

B. Treatment of AI as an Agent of a Principal

AI that is developed is rarely the work of a single individual. Usually a company employs a team of programmers to develop the AI.[113] The company also manages the programmers' work schedules, pays their salaries, and assigns them the work. Since the AI that the programmers create is a "work made for hire," they will not be able to have any copyright ownership over the AI code itself; instead, the principal will own the copyright.[114]

A work made for hire is work prepared by an employee within the scope of his or her employment.[115] A work is made within the scope of employment when "[(1)] it is of the kind [the employee] is employed to perform; [(2)] it occurs substantially within the authorized time and space limits; [and] [(3)] it is actuated, at least in part, by a purpose to serve the employer."[116] If these elements are met, the principal becomes the copyright owner of the work that an agent produces.[117]

Programmers who create AI for a company are likely not to have any rights in the work that the AI creates because the fruits of their labor is considered a work for hire. This treatment has been seen in other industries. For example, in *Lewis v. Activision Blizzard Inc.*, an employee was hired primarily to perform customer service within the video game, *World of Warcraft*. Over the course of her employment, her voice was recorded and used for one of the characters in the game.[118] The Ninth Circuit Court of Appeals held that the voice recordings were subject to copyright because they were recorded on a tangible medium.[119] It also found that even though the employee's day-to-day duties consisted primarily of customer service, that did not mean her duties did not also include assisting with the creation of content.[120] The court held that as an employee, she created the voice recordings for the benefit of her employer during the scope of her employment, and thus the employer had copyright ownership over the recordings.[121]

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113.   Bridget Watson, *A Mind of Its Own-Direct Infringement by Users of Artificial Intelligence Systems*, 58 IDEA: J. FRANKLIN PIERCE CENTER FOR INTELL. PROP 65, 81 (2017).

114.   Creative Non-Violence v. Reid, 490 U.S. 730, 739–40 (1989).

115.   *See* 17 U.S.C. § 101 (2018).

116.   U.S. Auto Parts Network, Inc. v. Parts Geek, LLC, 692 F.3d 1009, 1015 (quoting Avtec Sys., Inc. v. Peiffer, 21 F.3d 568, 571 (4th Cir. 1994)) (internal quotation marks omitted).

117.   Huson, *supra* note 63, at 72–73 ("If the programmer is considered to 'own' the work that was not 'authored' by her/him, then the work could be considered a 'work made for hire' under the [Copyright] Act . . . .").

118.   Lewis v. Activision Blizzard, Inc., 634 Fed. Appx. 182, 184–85 (9th Cir. 2015).

119.   *See id*. at 185; 17 U.S.C. § 101 (2018).

120.   *Lewis*, 634 Fed. Appx. at 184.

121.   *Id.*

Therefore, while the programmers are the ones who create the AI, they do not have any rights in the subsequent work that the AI produces. Agency rules allows the principal that hires the programmer to create the AI to also be the copyright owner of work produced by AIs.[122] This also lays the foundation of who is liable in case there is infringement.

1. Principal Liability for AI-Agent Infringement

The principal of an AI can be liable if that AI produces infringing work. An AI can infringe on a copyright in the same way a person can. For example, an AI taking a picture to create memes or copying text to write plagiarizing articles would constitute infringement.

For liability from copyright infringement purposes, we can apply *respondeat superior* principles, which says that a principal is liable for an agent's actions if the agent's action occurs within the scope of their agency.[123] Courts are often willing to hold the principal liable for agent copyright infringement as well. The two factors that a court will use to enforce principal liability are (1) control and (2) direct financial benefit.[124] The AI program is similar to an agent because the AI program works to accomplish a task for the principal. The principal controls how and what the AI produces. If the AI produces work that the principal does not like, the principal can modify the AI's existing instructions to reflect the principal's desires.[125] In the end, the principal is the one who benefits from the work created by the AI. It is easy to see how a principal of an AI-agent can be liable for the AI's actions. Therefore, when the agent produces work that is subject to copyright infringement, the principal should be liable to the injured party for that infringement.

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122. Ramalho, *supra* note 107, at 18 ("It is the aspect of controlling the production of the work (be it through an employment link or in certain cases of commissioned works) that affords the status of 'author' to an employer or a commissioning party; in other words, where the creator is a mere agent of someone else, the latter should be given authorship.").

123. RESTATEMENT (THIRD) OF AGENCY § 2.04 (AM. LAW INST. 2006) ("An employer is subject to liability for torts committed by employees while acting within the scope of their employment.").

124. Fonovisa, Inc. v. Cherry Auction, Inc., 76 F.3d 259, 262 (9th Cir. 1996) ("In the other line of cases, the so-called 'dance hall cases,' the operator of an entertainment venue was held liable for infringing performances when the operator (1) could control the premises and (2) obtained a direct financial benefit from the audience, who paid to enjoy the infringing performance.").

125. *See* Timothy Butler, *Can a Computer be an Author? Copyright Aspects of Artificial Intelligence*, 4 HASTINGS COMM. & ENT. L.J. 707, 712 (1981) ("[A programmer's] job will be to accurately inform the computer of the problem, wait for the computer to generate the program and then modify it to suit the particular application.").

Courts have held that if a principal has control over the agent, the principal is liable for the copyright infringement.[126] In *Dreamland Ball Room v. Shapiro, Bernstein & Co.*, an employer owned a dance hall and hired employees to play music for patrons.[127] The employees would regularly play copyrighted musical compositions, and the employer never stopped them or paid for the license fee. The Seventh Circuit found the employer liable for copyright infringement because the employer controlled what songs were played.[128] The court also explained that even if the employees were independent contractors, the employer still would be liable; this shows a court may find liability even with a lesser amount of control over the agent.[129] Similarly in *M. Witmark & Sons v. Calloway*, the employee, against the direction of his employer, used a roll of sheet music and played it during the screening of a silent motion picture.[130] The Eastern District of Tennessee held the employer liable despite the explicit instructions given to the employee to not use the copyrighted music because the employer ultimately had control over the employee's actions.[131]

Even if a principle has no control, if they economically benefit from the agent's actions, they can be held liable for infringement.[132] In *Shapiro, Bernstein and Co. v. H.L. Green Co.*, a department store owner's employee sold counterfeit records. The Second Circuit reasoned that both the owner and employee were liable because both parties' economic interests were intertwined, regardless of employment.[133] If the agent in all of these cases is an AI, then the principal will be liable for an AI's copyright infringement because they have control over the AI and are presumably economically benefiting from the AI's actions.

A hypothetical example is a principal who wants to create illustrations for a children's book. However, the principal is an awful artist and trains an AI to create the illustrations by showing the AI pictures from other children's books. The AI takes in thousands of examples of illustrations from children's books and then produces artwork based off of Dr. Seuss' *The Cat in the Hat*.[134] There are no literary elements, just pictures that look substantially similar to

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126. *See, e.g.*, Deutsch v. Arnold, 98 F.2d 686 (2d Cir. 1938) (holding that a landlord who lacked knowledge of the infringing acts of its tenant and who exercised no control over the leased premises was not liable for infringing sales by its tenant).

127. Dreamland Ball Room v. Shapiro, Bernstein & Co., 36 F.2d 354, 355 (7th Cir. 1929).

128. *Id.*

129. *See id.*

130. M. Witmark & Sons v. Calloway, 22 F.2d 412, 415 (E.D. Tenn. 1927).

131. *Id.* at 414–15.

132. Shapiro, Bernstein and Co. v. H.L. Green Co., 316 F.2d 304 (2d Cir. 1963).

133. *Id.*; Fonovisa, Inc. v. Cherry Auction, Inc., 76 F.3d 259, 262 (9th Cir. 1996).

134. Dr. Seuss Enterprises, L.P. v. Penguin Books USA, Inc., 109 F.3d 1394, 1396–97 (9th Cir. 1997).

illustrations in the book.[135] It is clear that the AI created the illustrations for the benefit of the principal, and the principal controlled which images it showed the AI.   The illustrations are therefore work product, and any copyright protection of that work will transfer to the principal.   Nevertheless, the AI has produced work that infringes the copyright of Dr. Seuss.   The principal controlled the AI because it not only fed the AI with information but could look at the output and adjust the code of the AI to avoid infringement.   Furthermore, the principal economically benefitted from the AI because they spent less time and energy in crafting illustrations for their children's book.   In conclusion, the principal will be held liable for the copyright infringement resulting from the AI product.

2. Principal Can Also be Liable for Torts Committed by the AI

Treating AI copyright as an agent-principal relationship is also convenient in the tort setting.   Common law has long held that masters are liable for torts of servants committed within the scope of employment.[136]   Human owners and/or programmers of AI are the masters of the AI that they own and/or create. Principals can therefore be liable to others injured by the actions of their AIs. For example, an injured driver can hold the owner of an autonomous self-driving vehicle liable for his or her injuries because the driver is the one ideally in control of the vehicle.[137]   Tort claims related to copyright will be examined below.

This, however, still leaves the question of how AI work is to be treated when the AI program itself is sold to a consumer as a consumer product.

C. Treatment of AI as a Consumer Product

This part of the article will examine copyright liability issues if the AI is sold as a consumer product.   With the increasing pace at which AI is able to create content, many companies have gone to markets where they can sell the AI to consumers, and the consumer uses the AI to generate the new work.[138] 15 U.S.C. § 2052(5) defines consumer product as, "any article, or component

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135. *Id*. at 1397. This hypothetical is loosely based off of case where defendant attempts to claim parody fair use defense where they used illustration designs from Dr. Seuss' *The Cat in the Hat* but about the OJ Simpson alleged murder. *Id*. at 1396.

136. *See* RESTATEMENT (SECOND) OF AGENCY § 219 (AM. LAW INST. 1958).

137. Sellwood, *supra* note 32, at 842; *see* RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL & EMOTIONAL HARM § 3 (AM. LAW INST. 2010) ("[N]egligence is a failure to do what the reasonable person would do 'under the same or similar circumstances.'").

138. *See* Barb Renner et al., *The Adoption of Disruptive Technologies in the Consumer Products Industry*, DELOITTE, https://www2.deloitte.com/content/dam/Deloitte/ec/Documents/consumer-business/DI_Disruptive-technologies-digital-reality%20(1).pdf [https://perma.cc/VBK2-LJM7] (last visited Jan. 14, 2020).

part thereof, produced or distributed (i) for sale to a consumer for use in . . . a household or residence, a school, in recreation, or otherwise, or (ii) for the personal use, consumption or enjoyment of a consumer . . . ."[139] The statute's language is broadly applied to any article that is produced or distributed for sale, use, consumption, or employment.[140] It is clear that AI can be a consumer product that a company creates and sells to end-users.

1. AI as a Tool

The principal-agency relationship cannot apply to certain AI products once the AI is sold as a consumer product because the principal will lose control over the AI.[141] In these cases, the copyright ownership can shift from the AI creator to the AI controller—in other words, the principal will not own the copyright, but the end-user, who is typically a consumer, will own the copyright.[142]

Treating AI as tools that consumers use can be applied to different industries. In the music industry, the company Hexachords has a product called *Orb Composer*, which is advertised as "the most accomplished music composition Artificial Intelligence in the world."[143] Orb is marketed towards composers, bands, and orchestrators as creating music mock-ups and assist in creating musical themes.[144] For the writing industry, the company Automated Insights sells an AI product that uses "natural language generation" to help consumers create human-sounding narratives.[145] For both products, the consumer is heavily involved in training and teaching the AI, and the end-user has ultimate control over the output of the AI.[146] For this reason, the end-user should hold the copyright if the AI is a consumer product.

In the United States, current laws treat products and machines as "legal extensions of the people who set them into motion."[147] However, AI complicates this doctrine because it makes it hard to find the traditional at-fault party for the victim to sue.[148] Nevertheless, courts are still willing to hold the

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139. 15 U.S.C. § 2052 (2018).

140. *See id*. § 2052(5)(A).

141. *See* RESTATEMENT (SECOND) OF AGENCY §§ 219, 228 (AM. LAW INST. 1958); RESTATEMENT (THIRD) OF AGENCY § 1.02 (AM. LAW INST. 2006).

142. Huson, *supra* note 63, at 72–74.

143. ORB   COMPOSER,   https://www.orb-composer.com/features/introduction [https://perma.cc/LS2C-TTZR] (last visited Feb. 14, 2019).

144. *See id*.

145. AUTOMATED INSIGHTS, https://automatedinsights.com [https://perma.cc/NCT2-EN3T] (last visited Feb. 14, 2019).

146. *See* ORB COMPOSER, *supra* note 135; AUTOMATED INSIGHTS, *supra* note 137.

147. A. Michael Froomkin, *Introduction in* ROBOT LAW x, xiv (Ryan Calo et al. eds., 2016).

148. *See* James M. Anderson et al., *Autonomous Vehicle Technology: A Guide for Policymakers*,   RAND   CORP.   115–16   (2016),

controller of the AI liable for any damages or injuries.[149] For example, in the case of autonomous driving vehicles that get into automobile accidents, courts are willing to hold only the driver liable because the driver is the one who has ultimate control over the autonomous driving vehicle.[150] Autonomous vehicles are consumer products and the driver of those vehicles is a consumer. Therefore, an end-user of an AI-consumer-product will not only be the copyright holder but also a likely target in a copyright infringement case.[151]

2. AI Producers should not be Secondarily Liable for Resulting Actions of Consumers Direct Infringers

Secondary liability applies when "one who, with knowledge of the infringing activity, induces, or materially contributes to the infringing conduct of another."[152]   A special case for secondary liability revolves around contributory infringement that can arise when a defendant sells goods used by a direct infringer.

Sony Corp. v. Universal City Studios is an example of a contributory copyright infringement case. In that case, Sony was sued by various movie studios for selling a device that allowed customers to record, copy, and store TV shows on tapes.[153] Sony was able to show that their device was used for purposes other than copyright infringement, and the majority of users who did use Sony's device for recording shows simply wanted to watch their shows at a later time and did not make unauthorized distributions.[154] The United States Supreme Court said that simply selling "a staple article or commodity of commerce suitable for substantial non-infringing purposes" is not contributory copyright infringement.[155]

When a company produces AI and sells it to an end-user and that end-user uses the AI in such a way that the AI does copyright infringement, the company will not be liable.[156] This is because AI has substantial lawful uses and so courts are willing to limit liability of instances of more acute fault, even though some of the AI will be misused.[157] Therefore, simply producing AI and distributing

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http://www.rand.org/content/dam/rand/pubs/research_reports/RR400/RR443-2/RAND_RR443-2.pdf [https://perma.cc/SY3H-TTCH].

149. *See id.* at 145.

150. *Id.*

151. Sellwood, *supra* note 32, at 844–47.

152. RESTATEMENT (THIRD) OF TORTS: PRODS. LIAB. § 2 (AM. LAW INST. 1998); Escola v. Coca Cola Bottling Co., 150 P.2d 436, 440–41 (Cal. 1944).

153. Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417, 422–23 (1984).

154. *Id.*

155. *Id.* at 440.

156. *Id.* at 442.

157. *See* Metro-Goldwyn-Mayer Studios Inc. v. Grokster, Ltd., 545 U.S. 913, 933 (2005).

or selling the AI that can potentially create copyright work in of itself does not make the producer liable.

Based off the *Sony* decision, companies like Hexachord and Automated Insights will not be secondarily liable for their users who use their AI products for copyright infringement. This is because the consumer is the end-user and actively controls what is fed into the AI. The companies that produce the AI software simply provide the underlying code, which is then modified by the consumer to meet the consumer's needs. Hexachord and Automated Insights cannot keep track of how all of their consumers are using the software; it will be too costly.[158] Even if the companies could keep tabs on how consumers are using their software, it's very likely that consumers will not want the companies snooping on their usage of the software. Consumers will feel like their privacy is being violated, or worse that their AI's work product could be stolen by the company.

Another example of this is the company, PaintsChainer, which sells an AI that helps artists colorize their art. By allowing the artist to take their basic line art, and with very few instructions, the AI learns which colors to apply to each drawing.[159] This helps saves artists time because now they can skip over most of the colorization process and let the AI handle it. However, this creates potential copyright infringement issues because it allows users to color in pictures of copyrighted characters.[160] Pikachu is a character in the Pokémon franchise and nothing is stopping a user from creating a pink Pikachu.[161] There is no fair use defense here because there is no parody, commentary, or critique.[162] At best, this is a derivative work that the original owner will have an exclusive right to.[163] PaintsChainer simply provides the tool to artists, does not encourage infringement, and most users probably do use the AI for personal

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158. *See id.* at 959 (Breyer, J., concurring) (stating that to hold defendants liable for any and all technology that can be used for copyright infringement would be costly and would hinder the development of new technology).

159. PAINTSCHAINER,   https://paintschainer.preferred.tech/webui/howto [https://perma.cc/A2QL-SS37] (last visited Feb. 15, 2019); *see* Darrell Etherington, *This Neural Network-Based Software Will Automatically Color in Your Line Art*, TECHCRUNCH, (Feb. 2, 2017), https://techcrunch.com/2017/02/02/this-neural-network-based-software-will-automatically-color-in-your-line-art [https://perma.cc/H3MC-C8EC].

160. Etherington, *supra* note 159.

161. *See*   SCHEME   COLOR,   https://www.schemecolor.com/pikachu.php [https://perma.cc/J8AC-3CWX] (last visited Feb. 15, 2019) (identifying the five colors in the Pikachu (Pokemon) palette: Jonquil (#FAD61D), Carrot Orange (#E19720), Red (RYB) (#F62D14), Kenyan Copper   (#811E09),   and   Black   (#000000).);   *Pikachu*,   POKEMON, https://www.pokemon.com/us/pokedex/pikachu [https://perma.cc/3DHC-655H] (last visited Feb. 15, 2019).

162. 17 U.S.C. § 107 (2018).

163. *Id*. § 106.

uses.[164] PaintsChainer does not have any actual control over how consumers use its products and cannot monitor the outputs of the AI.[165] Therefore, because companies that produce AI are so far removed from the copyright work creation, they should not be liable for the possibility that their consumers could use the AIs to commit copyright infringement.

However, if companies actively encourage users to use their product for infringement purposes, the United States Supreme Court has held that those companies can be liable.

3. AI Producers Should be Secondarily Liable if They Encourage users to Infringe using AI Products

This section will explain the exception of how a company is secondarily liable for the copyright infringement of an AI product when a consumer is the direct infringer. In *Grokster*, the United States Supreme Court outlined four elements for secondary liability: (1) distribution of a device or product, (2) acts of infringement, (3) intent to infringe copyright of the device or product, and (4) causation of acts of infringement by third parties.[166] In that case, Grokster, a file-sharing company, actively encouraged members to download and use their software to share copyright music.[167] Grokster advertised specifically to the recently-defunct Napster and sought to capture the same users.[168] Internal communications between officers in the company also revealed that the directors knew of their users using the program for infringement purposes, yet refused to do anything to mitigate the problem.[169] Grokster also failed to show how a small minority of their users used the program for legitimate, non-infringing purposes.[170] The United States Supreme Court held that even though Grokster did not engage in infringing behavior, their actions of distributing their program with the intent to promote infringement made Grokster secondarily liable to the injured parties.[171] Therefore, an AI producer should be wary of how they advertise and market their AI product to consumers because they could still be liable for the infringement of an end-user.

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164. PAINTSCHAINER, *supra* note 159.

165. *Id.*

166. Metro-Goldwyn-Mayer Studios Inc. v. Grokster, Ltd., 545 U.S. 913, 919 (2005) ("[O]ne who distributes a device with the object of promoting its use to infringe copyright, as shown by clear expression or other affirmative steps taken to foster infringement, is liable for the resulting acts of infringement by third parties.").

167. *Id.* at 939–40.

168. *Id.* at 924–25.

169. *See id.* at 936–37.

170. *See id.*

171. *See id.*

Hexachords, Automated Insights, and PaintsChainer all distribute a product to consumers; the AI product. All the company has to do is entice a potential customer to use the product to create an infringing product.[172] This enticement can be marketing, advertising, subtle hints, and/or examples of how the consumer's ability to infringe on copyright work is easier.[173] If the customer infringes as a result of the AI-producer's actions, the AI-producer is also liable for the copyright infringement.

D. *AI Copyright Infringement Does Not Equate to a Products Liability Claim*

This section will explain why AI copyright infringements do not fall under products liability. For a products liability suit, a product is defective when it contains (1) a manufacturing defect, (2) a warning defect, or (3) a design defect.[174] A manufacturing defect usually involves an injury that was caused by the product because the product did not meet certain manufacturing standards.[175] Design defects usually involve a foreseeable risk of harm from the product that could have been reduced or avoided by an alternatively reasonable design.[176] An instruction or warning defect is where the programmer has a duty to provide instructions on how the product can be safely used and to warn consumers of the inherent dangers in the product.[177] A products liability claim is therefore substantially different than a copyright infringement claim.

The driving force behind the AI's ability to solve problems is its software algorithms.[178] Generally, courts are not willing to classify software as a product.[179] This means that when AI is sold to a customer, the programmer

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172. *Id*. at 924–25.

173. *Id.*

174. RESTATEMENT (THIRD) OF TORTS: PRODS. LIAB. § 2 (AM. LAW INST. 1998); *see, e.g.*, Watson v. Ford Motor Co., 699 S.E.2d 169, 174 (S.C. 2010).

175. RESTATEMENT (THIRD) OF TORTS: PRODS. LIAB. § 2(a) ("[A product] contains a manufacturing defect when the product departs from its intended design even though all possible care was exercised in the preparation and marketing of the product[.]").

176. *Id*. § 2(b) ("[A product] is defective . . . when the foreseeable risks of harm posed by the product could have been reduced or avoided by the adoption of a reasonable alternative design . . . and the omission of the alternative design renders the product not reasonably safe[.]").

177. *Id*. § 2(c) ("[A product] is defective . . . when the foreseeable risks of harm posed by the product could have been reduced or avoided by the provision of reasonable instructions or warnings . . . and the omission of the instructions or warnings renders the product not reasonably safe.").

178. Surden, *supra* note 15, at 93.

179. Ryan Calo, *Robotics and the New Cyberlaw*, 103 CAL. L. REV. 513, 536 (2015) ("The code conveyed to the consumer fails to be defective for purposes of a product liability claim not because it lacks defects, but for the antecedent reason that it is not even a product."); Jeffrey K. Gurney, *Sue My Car Not Me: Products Liability and Accidents Involving Autonomous Vehicles*, 13 U. ILL. J.L. TECH. & POL'Y 247, 259 (2013) ("[C]ourts have not applied the manufacturing defect doctrine to software because nothing tangible is manufactured.").

and/or the seller of the AI will not be liable for copyright infringement that results from the AI under a products liability claim. The AI in this scenario is not defective; it is functioning as intended, but has simply produced infringing work. Furthermore, courts will usually look at whether there was physical injury before imposing product liability on the producer.[180] Because the AI code itself is not physically harmful, none of the products liability factors are met.

However, consumers may have a products liability case if the AI software itself is defective. If a consumer purchases an AI and the AI does not work as advertised, the normal rules of products liability should apply because AI programmers are in the best position to fix this error and applying strict liability against them will incentivize them to produce better AI products.[181]

E. Independent Creation Doctrine Should Not Apply to AIs as Employees

The term "independent creation" means that the author created the work without copying from other works.[182] This means that if two authors created works that closely resemble each other, each work will not result in copyright infringement as long as the authors did not copy from each other.[183] Work that is clearly copied from another work or looks to be an exact copy of work in the public domain will not be considered to be created independently.[184] Examples of work that do not fall under independent creation include (1) a photocopy or scan of a photograph, (2) scanning or digitizing literary work, (3) producing exact reproduction of a public domain work that cannot be distinguished from the original, and (4) creating a model that is an exact replica of something, where no creative expression has been added.[185]

AI adds a nuance to the independent creation doctrine because it can produce wide swarths of work at a faster rate than humans are able to produce. At the same time, it is difficult to know exactly how and what the AI used as inspiration to create its work.[186] The AI algorithms are a black box that even the programmers that created the AI are not able to see into; it is not possible to view the learning process of AI.[187] This creates a situation where the principal of the AI will be able to use their AI to create and hoard all the AI-

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180. *See, e.g.*, Escola v. Coca Cola Bottling Co. of Fresno, 150 P.2d 436, 440 (Cal. 1944).

181. *See* Sellwood, *supra* note 32, at 856–57 (arguing that if autonomous vehicle is defective, then the normal rules of products liability should apply).

182. *See* Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., Inc., 499 U.S. 340, 345 (1991).

183. *Compendium of U.S. Copyright Office Practices*, *supra* note 65, at 5.

184. Bridgeman Art Library, Ltd. v. Corel Corp., 36 F. Supp. 2d 191 195 (S.D.N.Y. 1999).

185. *Compendium of U.S. Copyright Office Practices*, *supra* note 65, at 21–22.

186. *See* Surden, *supra* note 15, at 93–94.

187. *See id.*

created work and cite to the independent creation defense if the AI creates copyright infringing work.

U.S. courts are not going to be fans of this because the purpose of U.S. Copyright Act is to promote the expression of ideas.[188] The potential of a principal being able to create and hoard innumerous expressions of ideas is counter to this policy because it reduces the forms of expression that other people can use to express an idea.[189]

A common way to attack an independent creation defense is by showing how the infringing party had access to the work as they produced their infringing work. In *Dimmie v. Carey*, Carey was accused of copying the song, *Hero*, from a songwriter named Rhonda Dee.[190] Dee argued that by sending her song to Columbia Records, her recording came to the attention of Columbia Record's President, who could have given it to Carey, who could have listened to it and then copied it while writing *Hero*.[191] The District Court of New York however found this argument to be too attenuated. Furthermore, Carey was able to show that *Hero* was independently created by introducing several working tapes which document the creative steps that Casey took to produce *Hero*, as well as a journal which shows the evolution of the lyrics of her song.[192]

In contrast, AI is not able to offer a journal or other evidence that explains its creative process. Furthermore, all the principal can do is show the hard code and other input that it gave to the AI, and therefore is not able to offer evidence of how their AI could come up with the work independently. Therefore, the independent creation doctrine should not apply to AI in the principal-agent context.

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188.   17 U.S.C. § 102(b) (2018); Baker v. Selden, 101 U.S. 99, 105-07 (1879).

189.   17 U.S.C. § 102(b); *Baker*, 101 U.S. at 105–07.

190.   Dimmie v. Carey, 88 F. Supp. 2d 142, 143 (S.D.N.Y. 2000) (dismissing a copyright infringement suit alleging that Mariah Carey's *Hero* was copied from song entitled *Be Your Own Hero*, holding that plaintiff did not prove access or striking similarity, and finding that Carey proved independent creation).

191.   *Copyright Infringement Suit Alleging that Mariah Carey's "Hero" was Copied from Song Entitled "Be Your Own Hero" is Dismissed; Court Rules that Plaintiff Did Not Prove Access or Striking Similarity, and Finds that Carey Provided Independent Creation*, 22 ENT. L. REP. (Aug. 2000); *see Dimmie*, 88 F. Supp. 2d at 143.

192.   *Copyright Infringement Suit Alleging that Mariah Carey's "Hero" was Copied from Song Entitled "Be Your Own Hero" is Dismissed; Court Rules that Plaintiff Did Not Prove Access or Striking Similarity, and Finds that Carey Provided Independent Creation*, *supra* note 191; *see Dimmie*, 88 F. Supp. 2d at 143.

F. AI Should Not be Treated as a Corporation for Copyright Purposes

One author has suggested that AI should be treated like a corporation.[193] This seems like a logical step considering that in October 2017, Saudi Arabia became the first country in the world to give an AI-robot citizenship.[194] A corporation includes a legal entity that has been given legal personhood.[195] If AI can be treated like a corporation, it will be allowed to hold copyright ownership in the products it creates, similar to how a corporation is able to hold copyrights, trademarks, and patents.[196]

Nevertheless, this does not solve the problem of assigning liability because the property of corporations is ultimately the property of the shareholders.[197] Owners who hold equity in the AI-corporation will be shielded from liability. Companies who produce AI will own the AI in whole, and consumers who use the AI will own the AI-corporation in whole. Both will be shielded from liability. This brings up another issue regarding corporate formalities, piercing the corporate veil, and capitalization requirements for an AI-corporation that are outside the scope of this article. In short, AI should not be treated as a corporation but rather as either an agent of a principal or a consumer product.

G. AI Work Should Not Automatically End up in the Public Domain

In *Naruto v Slater*, the monkey selfie case, the Ninth Circuit Court of Appeals held that no animal, including a monkey, can have a copyright.[198] The U.S. Copyright Office stated a policy that they will only register work that was created by a human being.[199] Works that are not copyrightable are in the public domain.[200]

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193.   *See* Sellwood, *supra* note 32; Roger Michalski, *How to Sue A Robot*, 2018 UTAH L. REV. 1021, 1055–56 (2018) ("Another model is to treat robots like corporations. Like robots, corporations are inherently human owned (directly or indirectly), controlled by humans, and can exist for a broad spectrum of purposes.").

194.   Robert D. Hart, *Saudi Arabia's Robot Citizen is Eroding Human Rights*, (Feb. 14, 2018) https://qz.com/1205017/saudi-arabias-robot-citizen-is-eroding-human-rights [https://perma.cc/7YX5-RLQE].

195.   *See   generally   Corporation*, THE   LAW   DICTIONARY, https://thelawdictionary.org/corporation [https://perma.cc/H5AA-V6Q8] (last visited Feb. 16, 2019).

196.   *See id.* (stating that a corporation is given the same rights as human individuals like buying and selling property).

197.   Lawrence B. Solum, *Legal Personhood for Artificial Intelligences*, 70 N.C.L. REV. 1231, 1259 (1992).

198.   *See* Naruto v. Slater, 888 F.3d 418, 422 (9th Cir. 2018).

199.   *Compendium of U.S. Copyright Office Practices*, *supra* note 65, at 4.

200.   *Id*. at 32; *Compendium   Glossary*, UNITED   STATES   COPYRIGHT   OFFICE, https://copyright.gov/comp3/docs/glossary.pdf [https://perma.cc/VE34-J7LH] (last visited Jan. 29, 2019).

Some authors have suggested that works created by AI should fall into the public domain.[201] This will allow AI work to be free for anyone to use and distribute.[202] However, removing copyright protection will discourage growth in AI technology.[203] While AI on its own has no interest in owning the work it creates, the AI producers and end-users want copyright protection for the fruits of their AI-created work. Just like author's motivation to create work will be diminished if he or she knew anyone could use and exploit their artwork, writing, or song once completed, AI producers and end-users' motivations will be diminished if their AI's work simply entered public domain.[204] Therefore, AI created work should not become part of the public domain, and the copyright should be given to the principal of the AI-agent or end-user of the AI-product.

H. There is No Copyright Protection for Someone's Voice, Name, or Likeness

This section will explain how a human cannot have a copyright claim against an AI that has been taught to reproduce the human's likeness. In December 2016, Mark Zuckerberg released a commercial advertising his Jarvis artificial intelligent home-assistant.[205] Jarvis is an Alexa-like[206] smart machine voiced by Morgan Freedom. In the commercial, Jarvis helps Zuckerberg with planning out his day, finding out the number of meetings Zuckerberg has, controlling the room temperature, and even helps Zuckerberg get dressed and set up breakfast.[207] All of Jarvis' voice commands and responses are in Freeman's voice.[208] Therefore, while Freeman may have a valid right of

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201. Huson, *supra* note 63, at 77 (saying works falling into the public domain provides the best solution to the problem to AI copyright ownership); Ralph D. Clifford, *Intellectual Property in the Era of the Creative Computer Program: Will the True Creator Please Stand Up?*, 71 TUL. L. REV. 1675, 1681, 1702–03 (1997) (arguing the output of creative computers cannot and should not be protected by federal intellectual property laws and that such results enter the public domain).

202. Brown, *supra* note 2, at 5.

203*. Id.* (saying that without proper copyright protection, "innovators may eventually shy away from investing their time and effort in this field").

204. Steve Schlackman, *Who Holds the Copyright in AI Created Art?*, ART LAW JOURNAL (Apr. 22, 2018), http://alj.orangenius.com/the-next-rembrandt-who-holds-the-copyright-in-computer-generated-art [https://perma.cc/D26M-WB3N].

205. Darrell Etherington, *Watch Mark Zuckerberg's Morgan Freeman-Voiced Jarvis AI in Action*, TECHCRUNCH, (Dec. 20, 2016) https://techcrunch.com/2016/12/20/watch-mark-zuckerbergs-morgan-freeman-voiced-jarvis-ai-in-action [https://perma.cc/MX3C-PUNH]; CNN Business, *Mark Zuckerberg's Awkward Afternoon with Morgan Freeman*, YOUTUBE (Dec. 20, 2016), https://www.youtube.com/watch?v=ZGLPxEv_EWo [https://perma.cc/6G3Z-28GF].

206*. Amazon Echo & Alexa Devices*, AMAZON, https://www.amazon.com/Amazon-Echo-And-Alexa-Devices/b?ie=UTF8&node=9818047011 [https://perma.cc/2TRC-UNSG] (last visited Jan. 30, 2019).

207. Etherington, *supra* note 205; CNN Business, *supra* note 205.

208. Etherington, *supra* note 205; CNN Business*, supra* note 205*.*

privacy claim, he will not have a valid copyright claim against Zuckerberg for misappropriating his voice.[209]

Courts have found that a voice is not copyrightable because a voice cannot be fixed onto a tangible medium.[210] A human being can imitate an accent of another human being and use that accent for commercial purposes without violating the Copyright Act.[211] The same likely would apply if Freeman had tried to sue Zuckerberg under a copyright cause of action for Jarvis using his name or likeness.[212]

In *Waits v. Frito-Lay, Inc.*, the voice of professional singer and songwriter, Tom Waits, was imitated by a cover singer, whose voice was indistinguishable from Waits, and then broadcast in a Frito-Lay commercial.[213] The court found that even though the defendants had deliberately imitated Waits' voice in style and manner, Waits did not have a valid copyright infringement claim against Frito-Lay.[214]

Courts are even more unwilling to find a copyright infringement if the original singer's voice is not used and a license to use the original song is obtained. For example, in *Sinatra v. Goodyear Tire*, Nancy Sinatra filed suit against Goodyear Tire for using the music, lyrics, and compositional arrangement of the song, *These Boots are made for Walkin'*, in one of its commercials.[215] Goodyear Tire had obtained a license from the copyright proprietor for this use and hired an unknown vocalist to sing the song for the commercial.[216] The court held that Sinatra did not have a copyright infringement claim because even though the lyrics, music, and composition were the exact same, it was not Sinatra's voice in the commercial, and Goodyear Tire had gone through the effort of procuring a license to use the original song.[217]

This analysis is further complicated by licensing samples within the music industry. In *Laws v. Sony Music Entertainment*, the plaintiff, Laws, sued Sony Music Entertainment ("Sony") for taking her recorded voice from a sample of

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209.   *See* Eastwood v. Superior Court, 149 Cal. App. 3d 409, 417, 198 Cal. Rptr. 342, 347 (1983) (holding that in order to have a valid right of privacy injury, plaintiff must prove: "(1) the defendant's use of the plaintiff's identity; (2) the appropriation of plaintiff's name or likeness to defendant's advantage, commercially or otherwise; (3) lack of consent; and (4) resulting injury").

210.   Midler v. Ford Motor Co., 849 F.2d 460, 462 (9th Cir. 1988) (holding that "[a] voice is not copyrightable because the sounds are not 'fixed'").

211.   *See id.*

212.   *See id.*

213.   Waits. v. Frito-Lay 978 F.2d 1093, 1096 (1992).

214.   *Id.* at 1100.

215.   Sinatra v. Goodyear Tire & Rubber Co., 435 F.2d 711 (9th Cir. 1970).

216.   *Id.* at 716.

217.   *Id.*

the song *Very Special* and using it in a Jennifer Lopez and L.L. Cool J song.[218] In that case, the court found that Sony did not infringe on Laws' copyright of the recorded song because Sony had purchased a license to use the sample from the music producer that held the sole and exclusive right to the copyright of *Very Special*.[219]

Current technology makes it easy for programmers to teach AI to listen to pre-recorded voice samples of the celebrity.[220] As long as the AI is not reproducing the recorded sample of a celebrity's voice and can actually show that it is putting on an accent, so to speak (pun intended), then the AI will not be liable for copyright infringement.

I. There Can be a Right of Publicity Claim for Someone's Voice, Name, or Likeness

All hope is not lost for Freeman if he wants to file a claim against Zuckerberg for training Jarvis to learn his voice and commercializing Jarvis for others to use. Many states, most notably California, recognize a right of publicity that allows an individual to control the commercial use of his or her name, image, and likeness.[221] Injured parties can have a right of publicity claim against others who make commercial uses of the injured party's name, image, or likeness.[222] Under California Civil Code Section 3344:

> Any person who knowingly uses another's name, voice, signature, photograph, or likeness, in any manner, on or in products, merchandise, or goods, or for purposes of advertising or selling, or soliciting purchases of, products, merchandise, goods or services, without such person's prior consent . . . shall be liable for any damages sustained by the person or persons injured as a result thereof. [223]

The California Court of Appeals has held that in order to have a valid right of publicity injury, a plaintiff must prove "(1) the defendant's use of the plaintiff's identity, (2) the appropriation of plaintiff's name or likeness to

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218.   Laws v. Sony Music Entm't, Inc., 448 F.3d 1134, 1135-36 (9th Cir. 2006).

219.   *Id.* at 1144.

220.   *See* Sophie Curtis, *Deep Listening: The Neural Network Learning to Hear You in a Crowd*, BIGDATA, (Sep. 25, 2017) https://bigdata-madesimple.com/deep-listening-the-neural-network-learning-to-hear-you-in-a-crowd [https://perma.cc/9Y4Y-SUFT] (saying that AI can pick up the voice of a single individual in a crowd; similar to the cocktail party problem).

221.   CAL. CIV. CODE § 3344 (West 2019).

222.   *Id*.

223.   *Id*.

defendant's advantage, commercially or otherwise, (3) lack of consent, and (4) a resulting injury."[224]

Courts are willing to find a right of publicity tort when one party intentionally tries to imitate the likeness of another. In *Midler v. Ford Motor Co.*, singer Bette Midler brought a right of publicity claim against Ford for using a voice that had a likeness to her voice.[225] Ford defended by saying that they used a soundalike singer, and Midler cannot have a claim for a voice that was not hers.[226] The court in that case also noted that Ford "had paid a very substantial sum to the copyright proprietor to obtain the license for the use of the song."[227] Nevertheless, the court found for Midler because Ford deliberately imitated Midler's voice by using the soundalike singer and instructing her to sound as similar to Midler as possible in order to sell their product.[228] Therefore, a party may bring a right of publicity suit against a party as long as the likeness that is being copied is widely known and deliberately imitated.

Right of publicity claims provide relief to injured parties even when they have expressly contracted *part* of their likeness away. For example, in *Facenda v. N.F.L. Films, Inc.*, Facenda collaborated with N.F.L. Films to narrate films for them.[229] Facenda's voice is a very recognizable and has even been described as "the Voice of God" by many football fans.[230] Before passing away, Facenda signed a standard release contract stating that N.F.L. Films could enjoy "the unequivocal rights to use the audio and visual film sequences recorded of me, or any part of them . . . provided, however, such use does not constitute an endorsement of any product or service."[231] Years later, N.F.L. Films produced a video game that used snippets of Facenda's recorded voice to make it seem as if he endorsed the video game, and Facenda's estate brought a right of publicity suit against N.F.L. Films.[232] The court held that Facenda's estate could enforce a right that he had contracted away because he did not waive the right to bring a false-endorsement claim.[233] Therefore, a right of publicity claim

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224. Eastwood v. Superior Court, 149 Cal. App. 3d 409, 417, 198 Cal. Rptr. 342, 347 (1983).
225. Midler v. Ford Motor Co., 849 F.2d 460, 463 (9th Cir. 1988).
226. *Id.*
227. *Id*. (quoting *Sinatra v. Goodyear Tire & Rubber Co.*, 435 F.2d 711, 717 (9th Cir. 1970, *cert. denied*, 402 U.S. 906 (1971) (internal quotation marks omitted).
228. *Id.*
229. Facenda v. N.F.L. Films, Inc., 542 F.3d 1007, 1028 (3d Cir. 2008).
230. *Id.* at 1011–12.
231. *Id.*
232. *Id.*
233. *Id.*

has far-reaching effects and can provide relief to people whose likeness is used by AI.

Voice falls under the California Section 3344 statute.[234] In Zuckerberg's commercial, Jarvis is using Freeman's voice. Freeman has one of the most recognized voices in the film industry,[235] and this has allowed him to narrate numerous films.[236] Zuckerberg uses his position as founder and CEO of Facebook to advertise his Jarvis product, and if Zuckerberg never obtained permission from Freeman himself to use Freeman's voice for the purposes of the commercial, Freeman's resulting injury is likely to be loss of revenue. If Zuckerberg is successful in commercializing Jarvis and customers are free to use the Freeman-voice version for Jarvis, Freeman is missing out on potential royalties. Therefore, Freeman will have a state tort claim.

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234. *See* CAL. CIV. CODE §3344 (West 2019).

235. Mandy Oaklander, *Science Explains Why You Love Morgan Freeman's Voice*, TIME, (Feb. 23, 2016) http://time.com/4233926/morgan-freeman-voice-waze-science [https://perma.cc/8SE8-DNRT].

236. *The Civil War* (PBS television mini-series 1990); THE TRUE STORY OF GLORY CONTINUES (TriStar Pictures 1991); *A Festival at Ford's* (television special Mar. 10, 1991); *The American Experience* (PBS television series 1991, 2003); INSIDE THE WHITE HOUSE (National Geographic, WETA 1995); *The Promised Land* (CBS televisions series 1995); THE SHAWSHANK REDEMPTION (Castle Rock Entertainment 1994); COSMIC VOYAGE (National Air and Space Museum 1996); THE LONG WAY HOME (Moriah Filsm, Simon Wiesenthal Center 1997); A TALE OF TWO SCHOOLS (WETA 2003); RAMESES: WRATH OF GOD OR MAN? (Atlantic Productions 2004); THE HUNTING OF A PRESIDENT (Diceburg LLC, Regent Entertainment 2004); A REMARKABLE PROMISE (Allentown Productions, Don Mischer Productions 2004); MILLION DOLLAR BABY (Warner Bros. 2004); *Decisions that Shook the World* (Discovery Channel television mini-series 2004); MARCH OF THE PENGUINS (National Geographic Feature Films 2005); THE CHALLENGE OF FREEDOM (Feralfilms LLC, WNET Channel 13 New York 2005); *Slavery and the Making of America* (PBS television series 2005); MAGNIFICENT DESOLATION: WALKING ON THE MOON 3D (IMAX, Playtone, Herzog-Cowen Entertainment 2005); *e2: The Economies of Being Environmentally Conscious* (PBS television series 2007); FROM THE CORNER (Home Box Office 2008); A RAISIN IN THE SUN (Sony Pictures Television, Storyline Storyline Entertainment, Bad Boy Worldwide Entertainment Group, Zadan/Meron Productions 2008); WHERE THE WATER MEETS THE SKY (Camfed 2008); THE EASTWOOD FACTOR (Lorac Productions 2010); AN AMERICAN SALUTE: THE POPS AT 125 (WCVB Boston 2010); THE PRESIDENT'S PHOTOGRAPHER: 50 YEARS INSIDE THE OVAL OFFICE (National Geographic Television 2010); BORN TO BE WILD (IMAX Filmed Entertainment 2011); *American Masters: Clint Eastwood: Out of the Shadows* (PBS television episode Sept. 27, 2000); *30 for 30: The 16th Man* (ESPN television episode May 4, 2010); *Through the Wormhole* (Discovery Science television series 2010); FOR THE LOVE OF LIBERTY: THE STORY OF AMERICA'S BLACK PATRIOTS (Eleventh Day Entertainment, Elkins Entertainment 2010); WE THE PEOPLE (Inland Sea Productions 2014); *Visa Ads for the Summer Olympics*, QUORA, https://www.quora.com/How-many-movies-has-Morgan-Freeman-narrated-What-are-they [https://perma.cc/2X2N-5CHE] (last visited Jan. 14, 2020).

IV. NON-LEGAL ANALYSIS

This section will examine non-legal and public policy issues regarding the ideas discussed in this article. The goal is to acknowledge potential issues with the ideas put forward in this article and to pose potential solutions for them.

A. The AI-Agent Does Not Need to be Paid

Implied in the agent-principal relationship is that the agent gets compensation for their services while working for the principal.[237]   As discussed above, AI-agent is a program that will work on behalf of the principal. This adds a complication to the schema because there is no way for the principal to compensate the AI. It does not make any sense to pay AI because the AI does not have any use for the money. Unless they are specifically trained to perform the task, AI typically do not engage in commerce, make investments, or gamble with money.[238]

A way around this issue of payment is to treat the AI as a gratuitous agent. A gratuitous agent acts without a right to compensation from the principal.[239] Furthermore, the gratuitous agent owes the same duties of care and loyalty that it would otherwise owe the principal as if it were a standard agent.[240] Therefore, this will be a potential workaround that will allow the agency-principal rules to be applied to AI, while allowing the principal to avoid paying the AI.

The fact that AI does not need to be paid will make them more appealing to employers use as workers. As a result, there is a high chance that AI will displace many human workers.

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237. RESTATEMENT (SECOND) OF AGENCY § 220(1) (AM. LAW INST. 1958).

238. *See* Yvette Joy Liebesman, *The Wisdom of Legislating for Anticipated Technological Advancements*, 10 J. MARSHALL REV. INTELL. PROP. L. 153, 175–76 (2010).

239. *Gratuitous   Agent   Law   and   Legal   Definition*,   USLEGAL, https://definitions.uslegal.com/g/gratuitous-agent [https://perma.cc/3GPH-8638] (last visited Mar. 23, 2019).

240. Home Undertakers v. Bristow Bldg. & Loan Ass'n, 42 P.2d 259, 260 (Okla. 1935) (holding that a gratuitous agent occupies the same fiduciary relation to his principal as an agent for hire, and, once he has entered upon the performance of his duties, is held to the exercise of the utmost good faith in dealing with his principal); Rodes v. Shannon, 222 Cal. App. 2d 721, 726 (Ct. App. 1963) (holding that a gratuitous agent insofar as exercising good faith is concerned is to be held to the same obligation as any other agent); Ramey v. Myers, 245 P.2d 360, 364 (Cal. Dist. Ct. App. 1952) (holding that a gratuitous agent has no greater license to indulge in misrepresentations, concealments, or other breaches of good faith than an agent for hire).

B. *Effects of AIs on the Social Security and Income Tax System Can be Overcome*

Imposing a use-fee for AI can have implications on the U.S. Social security system because AI will not pay into that system.[241] As AI start to replace more humans in existing jobs, there will be less money that goes into the social security system. The use-fee can be used to offset the loss of revenue for the social security system. Nevertheless, this brings up other issues like how the use-fee can also deter companies from developing AI and which party (the AI producer or the end-user) should pay the use fee, both of which are outside the scope of this article.

Tax issues also come up with AI displacing workers.[242] The Sixteenth Amendment gives Congress power to "lay and collect taxes on incomes, from whatever source derived," and this has been construed to apply broadly.[243] Every employer will give their employee a Taxpayer Identification Number ("TIN").[244] The TIN is a nine-digit number assigned by the Internal Revenue Service and is used for purposes of reporting employment taxes.[245] As AI displace more human workers, the government will receive less revenue from income tax. One solution that has been proposed is a robot tax.[246]

One possible solution to this problem is to give AI their own unique tax identifying number, say "Artificial Intelligence Identification Number" ("AIIN"). Initially, this is a logical solution for employers; if employers replace human employees who pay taxes with AI that pay taxes, the tax system should remain relatively unchanged. However, this could be more bad policy than good policy.[247] Taxing the production of AI is counterproductive to the development of AI technology; if companies and users are going to be taxed on the creation and use of AI, they will be less likely to seek out using AI.[248]

This is further complicated by the fact that AI products can easily be duplicated, modified, and exchanged; therefore, the AIIN can create problems for the AI market. For example, if a corporation develops an AI and sells that

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241. Oberson, *supra* note 100, at 255.

242. *Id*. at 248 (saying that "robots are increasingly replacing human activities, often in a more efficient way . . .").

243. U.S. CONST. amend. XVI; Cesarini v. United States, 18 Ohio Misc. 1 (N.D. Ohio 1969), *aff'd* 428 F.2d 812 (6th Cir. 1970).

244. *Employer Identification Number*, INTERNAL REVENUE SERVICE, https://www.irs.gov/pub/irs-pdf/p1635.pdf [https://perma.cc/H28D-ZC9H] (last visited Jan. 14, 2020).

245. *Id.*

246. Oberson, *supra* note 100, at 254–55.

247. Bianca Datta, *Can Government Keep Up with Artificial Intelligence?*, PBS (Aug. 10, 2017) https://www.pbs.org/wgbh/nova/article/ai-government-policy [https://perma.cc/5PBR-HVFN].

248. *Id.*

product to multiple third parties, questions like (1) does each AI need an AIIN even though it's the same product, (2) which corporation(s) should pay the taxes on the AI, and (3) how to assign quantitative work the AI performs for tax purposes come up.

One author has suggested that the AI can be paid the same amount a human worker is paid for an equivalent amount of work.[249] However this is a bad example because an AI by definition is supposed to become more efficient over time as it learns to improve on the task it was designed to solve. The AI can easily outperform a human worker equivalent over time, so paying the AI the same amount would not make any sense if we are using the human worker as a standard.

An alternative tax proposition is not based on the imputed income generated by the AIs' activities, but rather on the use of the AIs.[250] This tax operates similarly to taxes on planes, cars, animals, and other products.[251] In this case, there is a flat tax on the AI, with adjustments to the tax rate based on specific uses of the AI.[252] For example, the government can impose a flat tax on generic AI use, and if the AI is involved in creating copyright work, the government can have an additional tax. The government's justification for this can be that AI that create copyrightable work have an increased likelihood of creating infringing work than AI that do not create copyrightable work.

C. Using No-Fault Insurance to Offset Potential Infringement by AI

A common way to manage risk is to buy insurance. This may work because the general rule is that AI cannot be sued, and therefore the injured party will not be able to get compensation from the injury-causing AI.[253] With AI creating work that could be potentially infringing, making AI producers and consumers potentially liable, it would be smart for the parties to buy insurance.

One insurance model that can be adapted to potential copyright infringement by AI is no-fault insurance.[254] A no-fault insurance system will require every party that uses AI to produce copyright work to purchase the

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249.   Oberson, *supra* note 100, at 254–255.

250*. Id.* at 253.

251*. Id.* at 257.

252*. Id.*

253*. See* United States v. Athlone Indus., Inc., 746 F.2d 977, 979 (3d Cir. 1984) (explaining that robots cannot be sued.).

254*. No-Fault Auto Insurance*, INS. INFO. INST. (Feb. 3, 2014) http://www.iii.org/issue-update/no-fault-auto-insurance [https://perma.cc/AWX5-8APQ]; Laura Zakaras, *What Happened to No-Fault Automobile Insurance?*, RAND CORP. (2010), https://www.rand.org/content/dam/rand/pubs/research_briefs/2010/RAND_RB9505.pdf [https://perma.cc/6PN4-ZZGN].

insurance. If copyright infringement occurs, the injured party may file a claim of copyright infringement. If the injured party has a valid claim and wins, the court will require that the injured party be compensated through the insurance. The government may also require AI no-fault insurance providers to also pay into a fund that can be used to offset social security payments. [255]

No-fault insurance laws in the automobile insurance industry, however, is costly and several states do not offer no-fault automobile insurance.[256] The potential premium for AI no-fault insurance for copyright infringement may therefore also be relatively high and discourage users from creating and using AI. Issues of AI-copyright trolls and adjudication costs for this system are beyond the scope of this article.

V. CONCLUSION

AI is a fantastic tool for human beings and the future of AI goes only as far as the mind can imagine. While it is unlikely that we will have sentient AI like Bender from *Futurama* or the Skynet from the *Terminator* series, the pace and way that AI is being utilized today makes it such that the law lags on how to treat AI-created work under copyright law. As a result, it is unclear who owns or should own the copyrights that are produced by AI.

This article tried to predict how AI-produced work will be treated under current copyright law. It explained that AI cannot have any copyright ownership because the AI is not a sentient being nor is it a legal entity under U.S. law. Instead this article introduced two theories to show who could own the copyright over AI-created work. First, agency-principal rules can be applied to treat the AI as an agent of a principal, allowing the principal to have the copyright ownership. Second, in the case of AI consumer products, this article said that the copyright should belong to the consumer rather than the AI-producer because the end-user has final control over what the AI creates.

Where there is copyright, there is potential infringement and this article attempted to show how the producer of AI could be liable for the infringement under agency principals. If the consumer is the end-user in managing the AI, the agency principals should not apply, and the consumer should be liable for the infringement created by the AI. Interspersed throughout the article was also an analysis of tort law, namely right to publicity. This article attempted to show how agency-principal and consumer-products rules can be applicable to torts committed by the AI.

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255. Oberson, *supra* note 100, at 255–56.

256. *See A Failed Experiment: Analysis and Evaluation of No-Fault Laws*, CONSUMER WATCHDOG, https://www.consumerwatchdog.org/feature/failed-experiment-analysis-and-evaluation-no-fault-laws [https://perma.cc/MS4L-CUNC] (last visited Jan. 14, 2020).

The field of AI and copyright is very new, and hopefully this article helped predict how a court would generally rule in terms of copyrightable works made by AI, who is liable for AI infringement, and force people to seriously consider the public policy implications of AI and copyright.